

indy.ST25.txt
SEQUENCE LISTING

<110> University of Connecticut

Helfand, Stephan L

Reenan, Robert A

Rogina, Blanka

<120> Polynucleotides Encoding Cellular Transporters and Methods of Use Thereof

<130> UCT-0020

<150> 60/255,013

<151> 2000-12-12

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<170> PatentIn version 3.1

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<301> Blanka Rogina, Robert A. Reenan, Steven P. Nilsen and Stephen L. Helfand

<302> Extended Life-Span Conferred by Cotransporter Gene Mutations in Drosophila

<303> Science

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 Asn Phe Phe Ala Asn His Trp Lys Gly Leu Val Val Phe Leu Val Pro
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 ctg cta tgt ctg cct gtt atg ctg cta aac gaa ggc gcc gaa ttt cgg 144
 Leu Leu Cys Leu Pro Val Met Leu Leu Asn Glu Gly Ala Glu Phe Arg
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 Cys Met Tyr Leu Leu Leu Val Met Ala Ile Phe Trp Val Thr Glu Ala
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 Leu Pro Leu Tyr Val Thr Ser Met Ile Pro Ile Val Ala Phe Pro Ile
 65 70 75 80
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 Met Gly Ile Met Ser Ser Asp Gln Thr Cys Arg Leu Tyr Phe Lys Asp
 85 90 95
 acg ctg gtg atg ttc atg ggc ggc att atg gtc gcc ctg gct gtg gag 336
 Thr Leu Val Met Phe Met Gly Gly Ile Met Val Ala Leu Ala Val Glu
 100 105 110
 tac tgt aat cta cac aaa cgt ctt gcc ttg agg gta atc cag atc gtg 384
 Tyr Cys Asn Leu His Lys Arg Leu Ala Leu Arg Val Ile Gln Ile Val
 115 120 125
 ggc tgc agt ccc cgc aga tta cac ttt ggc ctc atc atg gtt aca atg 432
 Gly Cys Ser Pro Arg Arg Leu His Phe Gly Leu Ile Met Val Thr Met
 130 135 140
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 Phe Leu Ser Met Trp Ile Ser Asn Ala Ala Cys Thr Ala Met Met Cys
 145 150 155 160
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 Pro Ile Ile Gln Ala Val Leu Glu Glu Leu Gln Ala Gln Gly Val Cys
 165 170 175
 aaa atc aac cat gag cct caa tac caa atc gtt gga ggc aac aag aaa 576
 Lys Ile Asn His Glu Pro Gln Tyr Gln Ile Val Gly Gly Asn Lys Lys
 180 185 190

indy.ST25.txt

| | | | | | | | | | | | | | | | | |
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| Tyr | Leu | Gly | Ile | Ala | Tyr | Ala | Ser | Ser | Leu | Gly | Gly | Cys | Gly | Thr | Ile | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| atc | gga | act | gcc | acc | aat | ctt | acc | ttc | aag | ggc | atc | tac | gag | gct | cgt | 720 |
| Ile | Gly | Thr | Ala | Thr | Asn | Leu | Thr | Phe | Lys | Gly | Ile | Tyr | Glu | Ala | Arg | |
| | 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| ttc | aag | aac | tcc | acc | gaa | cag | atg | gac | ttc | ccc | acc | ttc | atg | ttc | tac | 768 |
| Phe | Lys | Asn | Ser | Thr | Glu | Gln | Met | Asp | Phe | Pro | Thr | Phe | Met | Phe | Tyr | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| tcg | gtg | cca | tcc | atg | ttg | gtc | tac | acc | ttg | ctg | aca | ttc | gtg | ttc | ctg | 816 |
| Ser | Val | Pro | Ser | Met | Leu | Val | Tyr | Thr | Leu | Leu | Thr | Phe | Val | Phe | Leu | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| caa | tgg | cac | ttc | atg | ggt | ctg | tgg | cgt | ccc | aag | agc | aag | gag | gca | cag | 864 |
| Gln | Trp | His | Phe | Met | Gly | Leu | Trp | Arg | Pro | Lys | Ser | Lys | Glu | Ala | Gln | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| gaa | gtc | cag | agg | gga | cga | gag | ggc | gcc | gat | gtc | gcc | aaa | aag | gtt | atc | 912 |
| Glu | Val | Gln | Arg | Gly | Arg | Glu | Gly | Ala | Asp | Val | Ala | Lys | Lys | Val | Ile | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| gat | cag | cgc | tac | aag | gat | ctg | ggt | ccc | atg | tcc | att | cac | gag | atc | caa | 960 |
| Asp | Gln | Arg | Tyr | Lys | Asp | Leu | Gly | Pro | Met | Ser | Ile | His | Glu | Ile | Gln | |
| | 305 | | | | 310 | | | | 315 | | | | | | 320 | |
| gtg | atg | att | ctg | ttc | att | ttt | atg | gtt | gtg | atg | tac | ttc | acc | cgc | aag | 1008 |
| Val | Met | Ile | Leu | Phe | Ile | Phe | Met | Val | Val | Met | Tyr | Phe | Thr | Arg | Lys | |
| | | | | 325 | | | | | 330 | | | | | 335 | | |
| ccc | ggc | atc | ttt | ttg | gga | tgg | gcc | gat | ttg | ctg | aat | tcc | aag | gac | att | 1056 |
| Pro | Gly | Ile | Phe | Leu | Gly | Trp | Ala | Asp | Leu | Leu | Asn | Ser | Lys | Asp | Ile | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
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| Arg | Asn | Ser | Met | Pro | Thr | Ile | Phe | Val | Val | Val | Met | Cys | Phe | Met | Leu | |
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| Pro | Ala | Asn | Tyr | Ala | Phe | Leu | Arg | Tyr | Cys | Thr | Arg | Arg | Gly | Gly | Pro | |
| | 370 | | | | | 375 | | | | | 380 | | | | | |
| gtg | ccc | acg | ggt | ccc | act | cca | tcg | ctg | atc | acc | tgg | aag | ttc | atc | cag | 1200 |
| Val | Pro | Thr | Gly | Pro | Thr | Pro | Ser | Leu | Ile | Thr | Trp | Lys | Phe | Ile | Gln | |
| | 385 | | | | 390 | | | | | 395 | | | | | 400 | |
| acc | aag | gtg | cca | tgg | ggt | ctg | gtg | ttc | ctg | ctt | ggc | ggt | ggc | ttc | gct | 1248 |
| Thr | Lys | Val | Pro | Trp | Gly | Leu | Val | Phe | Leu | Leu | Gly | Gly | Gly | Phe | Ala | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| ttg | gcc | gaa | ggc | agc | aag | cag | agc | ggc | atg | gcc | aag | ctg | att | ggc | aat | 1296 |
| Leu | Ala | Glu | Gly | Ser | Lys | Gln | Ser | Gly | Met | Ala | Lys | Leu | Ile | Gly | Asn | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |
| gct | ctg | att | gga | ttg | aag | gtt | ctg | ccc | aac | tct | gtc | ctc | tta | ctg | gtg | 1344 |
| Ala | Leu | Ile | Gly | Leu | Lys | Val | Leu | Pro | Asn | Ser | Val | Leu | Leu | Leu | Val | |

indy.ST25.txt

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| att gcc aac att att att ccc gtt ctg gcc gag atg tcc ctg gcc att Ile Ala Asn Ile Ile Ile Pro Val Leu Ala Glu Met Ser Leu Ala Ile 465 470 475 480 | | | 1440 |
| gag atc cat cct ctg tac ctg atc ctg ccc gct ggc ttg gcc tgc agt Glu Ile His Pro Leu Tyr Leu Ile Leu Pro Ala Gly Leu Ala Cys Ser 485 490 495 | | | 1488 |
| atg gcc ttc cac ctg ccg gtt agt act ccg ccc aac gct ttg gtt gct Met Ala Phe His Leu Pro Val Ser Thr Pro Pro Asn Ala Leu Val Ala 500 505 510 | | | 1536 |
| ggc tat gcc aac att agg acg aag gac atg gcc att gct gga atc ggt Gly Tyr Ala Asn Ile Arg Thr Lys Asp Met Ala Ile Ala Gly Ile Gly 515 520 525 | | | 1584 |
| ccg acc atc att acc atc atc acc ctg ttt gtt ttc tgc caa acc tgg Pro Thr Ile Ile Thr Ile Ile Thr Leu Phe Val Phe Cys Gln Thr Trp 530 535 540 | | | 1632 |
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| Asn | Phe | Phe | Ala | Asn | His | Trp | Lys | Gly | Leu | Val | Val | Phe | Leu | Val | Pro |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Leu | Cys | Leu | Pro | Val | Met | Leu | Leu | Asn | Glu | Gly | Ala | Glu | Phe | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Cys | Met | Tyr | Leu | Leu | Leu | Val | Met | Ala | Ile | Phe | Trp | Val | Thr | Glu | Ala |
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Met Gly Ile Met Ser Ser Asp Gln Thr Cys Arg Leu Tyr Phe Lys Asp
85 90 95

Thr Leu Val Met Phe Met Gly Gly Ile Met Val Ala Leu Ala Val Glu
100 105 110

Tyr Cys Asn Leu His Lys Arg Leu Ala Leu Arg Val Ile Gln Ile Val
115 120 125

Gly Cys Ser Pro Arg Arg Leu His Phe Gly Leu Ile Met Val Thr Met
130 135 140

Phe Leu Ser Met Trp Ile Ser Asn Ala Ala Cys Thr Ala Met Met Cys
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Pro Ile Ile Gln Ala Val Leu Glu Glu Leu Gln Ala Gln Gly Val Cys
165 170 175

Lys Ile Asn His Glu Pro Gln Tyr Gln Ile Val Gly Gly Asn Lys Lys
180 185 190

Asn Asn Glu Asp Glu Pro Pro Tyr Pro Thr Lys Ile Thr Leu Cys Tyr
195 200 205

Tyr Leu Gly Ile Ala Tyr Ala Ser Ser Leu Gly Gly Cys Gly Thr Ile
210 215 220

Ile Gly Thr Ala Thr Asn Leu Thr Phe Lys Gly Ile Tyr Glu Ala Arg
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Phe Lys Asn Ser Thr Glu Gln Met Asp Phe Pro Thr Phe Met Phe Tyr
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Ser Val Pro Ser Met Leu Val Tyr Thr Leu Leu Thr Phe Val Phe Leu
260 265 270

Gln Trp His Phe Met Gly Leu Trp Arg Pro Lys Ser Lys Glu Ala Gln
275 280 285

Glu Val Gln Arg Gly Arg Glu Gly Ala Asp Val Ala Lys Lys Val Ile
290 295 300

Asp Gln Arg Tyr Lys Asp Leu Gly Pro Met Ser Ile His Glu Ile Gln
305 310 315 320

FOOTER: 64200T

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Pro Gly Ile Phe Leu Gly Trp Ala Asp Leu Leu Asn Ser Lys Asp Ile
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Arg Asn Ser Met Pro Thr Ile Phe Val Val Val Met Cys Phe Met Leu
355 360 365

Pro Ala Asn Tyr Ala Phe Leu Arg Tyr Cys Thr Arg Arg Gly Gly Pro
370 375 380

Val Pro Thr Gly Pro Thr Pro Ser Leu Ile Thr Trp Lys Phe Ile Gln
385 390 395 400

Thr Lys Val Pro Trp Gly Leu Val Phe Leu Leu Gly Gly Gly Phe Ala
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Leu Ala Glu Gly Ser Lys Gln Ser Gly Met Ala Lys Leu Ile Gly Asn
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Ala Leu Ile Gly Leu Lys Val Leu Pro Asn Ser Val Leu Leu Leu Val
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Val Ile Leu Val Ala Val Phe Leu Thr Ala Phe Ser Ser Asn Val Ala
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Ile Ala Asn Ile Ile Ile Pro Val Leu Ala Glu Met Ser Leu Ala Ile
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Glu Ile His Pro Leu Tyr Leu Ile Leu Pro Ala Gly Leu Ala Cys Ser
485 490 495

Met Ala Phe His Leu Pro Val Ser Thr Pro Pro Asn Ala Leu Val Ala
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Gly Tyr Ala Asn Ile Arg Thr Lys Asp Met Ala Ile Ala Gly Ile Gly
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Pro Thr Ile Ile Thr Ile Ile Thr Leu Phe Val Phe Cys Gln Thr Trp
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